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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,902	12/17/2001	David Thiede	737.011US1	1988

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EXAMINER

WILLIAMS, THOMAS J

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 11/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,902

Applicant(s)

THIEDE ET AL.

Examiner

Thomas J. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 6-9, 12-14, 19, 23-28 and 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,056,374 to Hiwatashi.

Re-claim 1, Hiwatashi discloses a system comprising: a processor 12; a brake controller; a first range detector 13 is coupled to the processor; the processor operates the brake controller based upon a comparison of a deceleration profile with range data from the first detector and the speed of the vehicle, see abstract.

Re-claim 3, a vehicle speed sensor 8 is coupled to the processor.

Re-claim 4, vehicle speed sensors are generally coupled to a speedometer, thus providing vehicle speed information to the operator.

Re-claims 6 and 7, the speed sensor is a wheel speed sensor, coupled to a wheel as is well known in the art.

Re-claim 8, the examiner takes official notice that the use of Hall effect sensors as speed sensors is well known in the art, see cited references.

Re-claim 9, Hiwatashi discloses at least two range detectors.

Re-claims 12 and 13, a steering sensor or longitudinal sensors are considered directional sensors, since they do interpret a direction of the vehicle. The examiner takes official notice that

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the use of Hall effect sensors as steering sensors is known in the art, see cited references. It is noted by the examiner that Hall effect sensors are well known in the vehicle arts and are commonly used for a variety of purposes, such as steering sensors, speed sensors, and directional sensors.

Re-claim 14, Hiwatashi discloses a method, comprising: receiving distance data from a range detector 13 based on a distance between a vehicle and an obstacle; receiving speed information; generating an electronic correction signal based upon a comparison of the distance data and speed information with a deceleration profile; and operating a vehicle brake based upon the correction signal. A first deceleration signal corrects a second deceleration signal when the vehicle moves within a predetermined distance of the obstacle.

Re-claim 19, vehicle direction data is received by the processor.

Re-claims 23 and 24, speed data is received from a wheel sensor.

Re-claim 25, the brake controller will have control over brake valves by transmission of electrical pulses to the solenoid valves.

Re-claim 26, Hiwatashi discloses a method, comprising: receiving speed information; receiving obstacle information from a sensor 13; determining a deceleration profile based upon speed and obstacle information, such as distance; the brake system is actuated based upon the deceleration profile.

Re-claim 27, the on-board computer will have a data bus.

Re-claim 28, the speed information is provided by a wheel speed sensor.

Re-claim 29, Hiwatashi discloses the use of CCD cameras and or laser radar units as the obstacle detectors, both of which receive wireless signals. Each device receives electromagnetic signals which are wireless.

Re-claims 31-33, Hiwatashi discloses the use of hold valves, dump valves and a hydraulic pressure source, see column 2 lines 51-52. It is noted that pressure increase valves will have a hold function when in a closed state. A pressure source can be the master cylinder or pump, both of which are used in anti-lock braking systems.

Re-claim 34, Hiwatashi discloses a method, comprising: receiving an electronic speed signal for a vehicle, such as from the wheel speed sensor; receiving an electronic direction signal for the vehicle, such as from the steering sensor; receiving an electronic condition signal for the vehicle, such as an acceleration signal or pressure signal; actuating the brake system of the vehicle to restrict vehicle movement based on the electronic speed signal, the direction signal, and the condition signal. All of the signals in Hiwatashi are inputted into the processor and are utilized as necessary.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiwatashi in view of US 3,918,058 to Noyori et al.

Hiwatashi fails to teach the use of a Doppler radar sensor as the speed sensor. Noyori et al. teaches the use of a Doppler radar sensor to determine a vehicle speed. It would have been obvious to one of ordinary skill in the art to have utilized the teachings of Noyori et al. when having provided the system of Hiwatashi with Doppler radar speed sensing means, thus increasing the accuracy of vehicle speed determination.

6. Claims 2, 10, 11, 15-18, 20-22 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiwatashi in view of US 5,734,336 to Smithline.

Re-claim 2, Hiwatashi teaches that a variety of devices can be used as the range detectors. However, Hiwatashi fails to specifically teach the use of wireless devices as the range detectors. Smithline teaches the use of wireless range sensors for use with a collision avoidance system on a vehicle. It would have been obvious to one of ordinary skill in the art to have provided the system of Hiwatashi with wireless range detectors as taught by Smithline, thus reducing the cost of the system by eliminating materials such as wire and wire harnesses.

Re-claims 10, 11, 15-18, 20-22 and 30, Hiwatashi teaches the use of a radar sensor for the range detector. However, Hiwatashi fails to teach a third range detector, or the use of wireless ultrasonic detectors facing in a plurality of directions. Smithline teaches the use of a plurality of

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range detectors and the use of wireless ultrasonic sensors as the range detectors. It would have been obvious to one of ordinary skill in the art to have utilized the teachings of Smithline when having used the system of Hiwatashi on a large vehicle requiring a greater number of sensors, thus improving the effectiveness of the system.

The type of sensor used for each of the sensors is considered a design choice based upon accuracy and reliability. As stated previously the use of wireless sensors reduces the need for wire and harnesses thus reducing the overall cost of the system.

7. Claim 35-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiwatashi in view of Smithline and in view of US 6,450,587 to MacGregor et al.

Re-claims 35, 36 and 39, the automatic brake control of Hiwatashi as modified by Smithline fails to teach the electronic condition signal corresponding to an open door, or open valve, or raised lift and while in a stationary state. MacGregor et al. teaches an automatic brake control and application in which the braking action is initiated if an open door is sensed, a speed signal indicates a stop condition such as a park condition of the vehicle, or during a rearward movement of a vehicle such as backing up to a dock. It would have been obvious to one of ordinary skill in the art to have provided the automatic brake control apparatus of Hiwatashi with a open door sensing function, a parking brake function, and a speed control function when approaching an obstacle to the rear as taught by MacGregor et al., thus improving the safe operation of the vehicle.

Re-claim 37, the brake system of Hiwatashi is energized during movement of the vehicle.

Re-claim 38, the brake system of Hiwatashi is energized during forward movement of the vehicle and when the speed signal indicates a speed greater than a predetermined value.

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Re-claim 40, the brake system of Hiwatashi is energized to restrict vehicle movement in response to a detection of an obstacle.

Re-claim 41, the automatic braking system of Hiwatashi is considered an emergency stop procedure, in that it operates independently of the operator when a hazard is detected.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gobel et al., Johnson, Fuchs et al., Miller et al., and Gunderson et al. each teaches a collision avoidance system having a plurality of sensors around the vehicle.


9. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is (703) 305-1346. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder, can be reached at (703) 308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

TJW

November 19, 2002


JACK LAVINDER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600
11/20/02